

Hudson (E.D.)

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OF THE INDIGESTIONS.

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BY E. DARWIN HUDSON, JR., M.D.,

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to Bellevue and St. Elizabeth Hospitals; Member of New York Academy
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A Paper read before the New York Medical Journal Association, May, 1876. Reprinted
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FUNCTIONAL derangements, which are evanescent or of brief duration, often simulate the most alarming and hopeless organic diseases. They are induced by the delicate and controlling influence of the ganglionic nervous system, by vascular disturbances and perversions of the nutritive qualities of the blood. Of the cases presented to the attention of specialists, whether by direct application of solicitous patients, or the consultation sought by the conscientious practitioner, a large proportion present no evidence of the organic disease that was anticipated. The auscultator finds the intermitting irregular and palpitating heart, præcordial distress and disordered pulse, in a majority of cases, unattended by true cardiac disease; cough, dyspnœa and thoracic pain are often independent of any primary pulmonary disease. The ophthalmoscope and laryngoscope daily exclude organic causes of alarming subjective symptoms of eye and throat disease.

Indigestions, by which must be understood not alone the defects in gastric and intestinal reduction of food, but also the perversions of absorption, assimilation and excretion, with the morbid blood states they create, are pre-eminently causes of functional disorders, as well as of secondary pathological changes in various parts of the body. This results by virtue of the office of the digestive apparatus, which is the *fons et origo* of nutrition and continued life, and of its extent of peripheral nerve distribution and ganglionic supply. The quality of diet, the methods of its gastric and intestinal digestion largely influence the development and career of the individual life from infancy to age—the stature, form,

temperament, intellectual force, health and duration of life. Whether the cardiac valves shall calcify, atheroma attack the vessels of the retina, the optic nerve atrophy, the arteries degenerate, and the brain become the seat of softening or apoplexy, is a question of digestion and assimilation. The question of hyperplasia, plethora, and arterial tension takes precedence, in time and diagnostic importance, of the hypertrophied heart, infiltrated liver and spleen, and fibrous kidney. The acid alimentary tract can be diagnosed and treated with greater benefit to human life than the subsequent lactic and lithic acid saturations of the body, or the many chronic changes in the fibrous structures which rheumatic and gouty vice induce. The diagnostic relations of the indigestions are very broad.

1st. As the frequent and only cause of anomalous and obscure symptoms or local symptomatic functional disorders.

2d. As leading to obstinate organic diseases.

3d. As complicating the symptoms of existing diseases.

By far the more frequent and interesting are the purely symptomatic or sympathetic disturbances of digestive origin. They are indeed numerous. Trousseau, in commending the admirable "*Traite de la Dyspepsie*," (Paris, 1866), of M. Beau, facetiously suggests, in view of the innumerable symptoms to which it gives rise, that we are in danger of returning to the pathology of Broussais and of finding the origin of all disease in the phlegmasiæ mucosæ.

In a few condensed histories of cases coming under my own observation at different times, I shall illustrate some of the functional relations of indigestion.

CASE 1—*Acute Melancholia due to Constipation and Azotized Matter in the Blood*.—In September, 1868, I was called to see Mrs. W. M., whom I was informed was in a state of hopeless mental depression and physical helplessness, and her removal to an asylum was contemplated. She was the mother of a healthy boy of two and a half years, had a kind husband, and with them resided at the home of her parents, and had every comfort and luxury she might desire. All her life, to within half a year, she had enjoyed perfect health, had possessed a cheerful disposi-

tion, and was interested in her family, her acquaintances, and her church.

But she gradually had her natural gait obscured, became sober and reserved, without either expressions of sorrow or nervous manifestations of the hysterical order, and for four or five months had lapsed steadily more deeply into a state of profound apathy and gloom. She declined conversation, ignored her husband, exhibited neither interest nor care for her boy, was indolent, leaving her bed only on compulsion, often forcibly lifted from it and was dressed by her mother. She ate but little, sat in a state of semi-stupor until returned to her room and bed. When I saw her I found her in fair flesh, her complexion muddy, eyes dull, pupils normal, reacting to light, and her features blank or masked, with a faint underlying expression of helpless distress, as if conscious of the cloud which overshadowed her. Hands and feet cool and clammy. The tongue was coated, breath loaded with fæcal exhalation, the urine stated to be free, but the bowels, obstinately constipated, moved only by cathartics, which she often refused. The heart and lungs were normal, and as she was free from menstrual irregularity, leucorrhœa and lumbar pains, the uterus was assumed to be normal, and vaginal exploration was necessarily deferred until further acquaintance would warrant it. The case resembled many which I had seen in dispensary service, though much less grave, which depended solely on acholia and costiveness. Believing that her brain suffered solely from malnutrition by the circulation of azotized matter in the cerebral vessels from these causes, I ordered an enema of 3 j. of inspissated ox bile, dissolved in a quart of warm water. Cathartic pills were ordered. The effective unloading of fæcal matter, and of the engorged viscera, gave a partial relief to her symptoms. Cathartic pills were given on alternate days. Tincture of calisaya and gentian was given; her early rising, friction of body and dressing, and out-of-door exercise insisted on; she soon walked in her door yard, later to a friend's, and at the end of a week called on me, conscious of her improved health, exhibiting sane expression, and an occasional smile upon her still clouded countenance. In a fortnight she was well; has

remained so; has since had a second child, and to the present, a lapse of eight years, has developed no trace of mental peculiarity, hysterical tendency, or uterine disorder.

Very different and far more frequent in city life, among active men of business, are cases like the following:

CASE 2—*Apprehension of Cerebral Softening, Hypochondria—Cause: Dyspepsia.*—In December, 1874, was consulted by Mr. S. L., aged 42, married, a native of France, but coming to this country while a boy; his wife and associates American. He combined the physique and nerve temperament of a Frenchman with the habits of diet and life of better class of Americans; vocation, consulting engineer. He had been employed in the West in the building of railroads and bridges, and never knew ill-health until coming to New York. Having assumed, in addition to his usual duties, the compilation of an extensive Official Report on Public Transit, he began to complain of loss of mental vigor, a want of power, fluency of expression and choice of terms, and an occasional momentary clouding of the intellect and suspension of memory. The recurrence of these attacks created apprehension of cerebral softening, and possible imbecility or paralysis, a dread which steadily grew upon him. He had found immediate relief at these times by use of alcoholic stimuli, carminatives, and an hour's rest. But his face bore a puzzled and appealing expression, and he feared, in the formulation of his own vocation, "he had exceeded his 'limit of elasticity,' and could never regain it." His pupils and retina were normal, he was free from pain in the head or spine, heart and lungs and kidneys normal, but had a fickle appetite, slightly coated, irritable tongue, and slight constipation. He recalled, when questioned, that his attacks were preceded by epigastric and often abdominal uneasiness, rarely slight colicky pain, and with their subsidence he had eructations of gas. Diagnosis: Cerebral symptoms subjective, due to atonic dyspepsia from over work. Being unable to suspend his literary work as it stood without great loss, he was compelled to forego the rest, which was chiefly indicated. By use of diluted schnapps, $\frac{2}{3}$ ss. to $\frac{3}{4}$ j. in warm water, before meals, and a tonic laxative pill of nuxvomica, quinia, belladonna and podophyline, after meals, walking

to business each morning, and suspending writing at night, he was, in a measure, relieved of his mental gloom and enfeeblement. He sailed for Europe in May, and while walking through Switzerland, suddenly one morning, was conscious of the dissipation of the heavy gloom which overcast his life, and a return of full physical elasticity and intellectual resiliency, and a youthful buoyancy of spirits. He has since continued well, but his business has kept him much out of doors.

It is true that such cases of dyspepsia are induced by deficient innervation of the stomach, yet the painful digestion reacts through the agency of the pneumogastric, and creates directly the mental depression and distress. As well expressed by Trousseau, "difficult digestion greatly interferes with intellectual work, impedes the expression of thought, and when the difficulty is habitual, the disturbance of the gastric functions assumes the character of melancholy and hypochondria."

"The spleen with sullen vapors clouds the brain,
And binds the spirit in its heavy chain."

Disturbances of the intra-cranial circulation through the intervention of the sympathetic nerves are frequent. Sense of fullness and weight at the vertex, slight dizziness, blurred vision, marked vertigo, staggering gait, with wavering and falling sensation, with dread of apoplexy and paralysis, are the characteristic symptoms, yet without any organic disease may persist for years.

CASE 3—*Vertigo and Disturbed Co-ordination in Locomotion from Chronic Indigestion*.—R. F. H. aet 49.—An accountant in a bank and closely confined, has suffered for past fifteen years attacks of variable severity, cranial oppression, temporary dimness of vision, suffusion of face, labored breathing, dizziness, unsteady gait, with alarm at times of greatest severity. On all such occasions the heart palpitated, there was epigastric distension and drum-like resonance over stomach, eructations of gas gave partial relief, and after the hour of digestion had passed, entire recovery. By carefully-selected and limited amount of diet, avoiding meat to excess, the use of aperients at intervals, habitual exercise,

he has learned to reduce the severity and frequency of the attacks.

When such symptoms are aggravated there may be total blindness and perversion of sensations.

CASE 4—*Slight Vertigo, Temporary Total Blindness, Marked Suspension of Memory, Disaesthesia and Anaesthesia from Atonic Dyspepsia and Acute Indigestion.*—E. —, student, addicted since fourteenth year to close application and irregular exercise. While pursuing collegiate studies suffered often from periods of indigestion, blurred sight, and slight hypochondria. Spring of 1865, being then quite well and twenty-one years of age, retired in evening to room to study. He indulged freely in eating some very dry and hard chestnuts which had lain in chamber closet over winter. While reading, sitting up in bed, by the light of a broad, "fan-tipped" gas flame, he suddenly perceived absolute darkness. The first and momentary suggestion was that the light was extinguished, but in an instant corrected by perceiving a sense of fullness and tension in the eye-balls and epigastric discomfort; in a moment sight partially returned to the left eye, the gas-jet appearing distant and dimly, as in a fog, and in from three to five minutes the sight was re-established in both eyes. During subsequent years, '76-7 and 8, while closely confined and severely taxed by pursuit of professional studies, in two instances, the right eye has been momentarily blind, and frequently at the mid-meal period, when wearied and the stomach distended with flatus, a partial obscuration of both—usually the upper half of the field of vision, a cloud concealing the ceiling, wall pictures and the heads and shoulders of teachers, but lifting in a moment or thinning away. These attacks came to be viewed with no apprehension, as ophthalmoscopic examination showed no retinal lesion, and clearness and power of vision for all distances and purposes remained unimpaired. Then speedy relief was always hastened by pressure on the eye-ball, and by forced eructation of gas, hastened by powerful percussion of the precordial region. They entirely ceased with the discontinuance of hard and confining study, and in subsequent eight years to present rarely occur, except

to a mild degree at times of unusual fatigue, indiscreet diet and special mental work.

The same case presented in 1872 peculiar perversions of sensation. Following a full meal and labored digestion, in a few instances numbness or sleepiness of the arm, once anæsthesia of the anterior crural region, suggesting renal disorders, and, again, a peculiar sensation of numbness, with great weight of, and enormous enlargement of the upper lip and right hand. Fully conscious of the dyspeptic origin and harmless nature of these symptoms, which were soon dissipated by 30 gtts. tr. capsicum, or a light glass of wine, their characteristics were noted. The upper lip seemed at first full and pouting, as when attacked by acute œdema but the sensation increased to that of an indurated and overhanging development of the lip—as by elephantiasis. In the case of the hands, they seemed swollen from the wrist, symmetrically enlarging to the seemingly bulbous fist, as often drawn in caricatures, and even seemed to extend a foot beyond their actual length. That such perversions of sensations are due to vascular disturbances at the nerve centers seems probable from their brief duration and subsidence coincident with relief to the stomach. This same case affords an illustration of disturbed mental action, and interruption of mental procedure and memory, which might be erroneously viewed as due to definite and serious brain lesion. And it is valuable as being the personal observation of a physician of his own case to which he had given careful but calm study. Although these attacks happened as a rule when closely applied to mental work or following it, they never occurred unless the digestive apparatus was disordered, suddenly with no warning, a sense of extreme fullness in the head, gastric uneasiness and sinking sensation, full consciousness being retained; the recognition of the suspended line of thought and memory was painfully clear, no other perverted sensation or loss of power. Lying down or going to the fresh air, or again, putting on a hat and walking out, the lost train of thought would be slowly regained by appealing to the association of ideas; rehearsing dates—the year, month and day—the work and appointments of the previous day, of the previous hour; and in a few moments the head would clear,

and appointments, plans, and all that which shortly before seemed hopelessly lost in oblivion was again restored. Alcohol, a few drops of chloric ether, the volatile spirits or peppermint, even food taken upon the stomach hastened the relief. It remains to say that with all these diverse manifestations, by active exercise, care in diet and regulated habits, nearly three years' of complete immunity from dyspepsia followed, and general good health confirmed the diagnosis of the functional nature of these diverse attacks.

In children dilatation of one or both pupils, and temporary internal squint of spasmodic nature, are occasional results of irritation of the digestive organs, especially by ascarides.

Dr. J. C. Thomas, at a meeting of the Medical Union, related the case of a lady who, when past fifty years, for the first time had continued epileptic seizures of alarming nature, followed by semi-coma. No cause being apparent, the bowels were moved for revulsive effect, and a large bolus of lumbricoids was evacuated. Convulsions and reflex nervous symptoms are so commonly due in children to disorders of alimentation, that the general practitioner rarely makes a positive diagnosis of graver causes without first resorting to prompt cathartics. The diagnostic distinction is most important, since convulsion is so often the first admonition of meningeal disease and of the acute exanthemata, especially scarlatina. Equally important, in a diagnostic view, is vomiting—a symptom producible both by gastric and cerebral disease. Without detailing the lesser differential features, it may be said the vomiting of centric nerve origin is unaccompanied by the evidences of indigestion—coated tongue, foul breath, etc.; that it is spontaneous and projectile, not preceded by palor, nausea; accomplished without effort, not followed by shock or exhaustion, and has no intervening period of retching. The diagnostic relations of chorea and indigestion are important. If, as claimed by leading neurologists, chorea is dependent on lesions of the corpora striata—minute emboli—certainly a majority of the milder forms of this disease must be set apart as functional, only choreiform, since they yield to brief periods of rest and discipline, and not a few to correction of diet and the use of alkalis

and aperients. West, of London, in the light of his unusual clinical experience, regards most cases non-organic, many due to digestive irritations, and most dependent on that product of indigestion, the rheumatic vice. M. Blanche cured his cases, on an average, in twenty-six days. Such has been my experience with a few mild cases in private practice, and several at the Clinic of the Infirmary for Women and Children. The diagnostic relations of indigestion and apoplexy are rather those of predisposing cause and threatened or ultimate effect than of sympathetic resemblances. Apoplexy is so often the result of labored digestion, distended stomach, constipation, hemorrhoids—conditions which both temporarily and permanently increase intra-vascular tension. The suffused face, turgid neck, slow, full, sluggish pulse are the product of a hyperinosis of the blood and overloaded circulation of the organs of assimilation and excretion. To cure constipation by cholagogue laxatives and reduce the quantity of nitrogenous food is often to avert apoplexy, or prevent its recurrence.

EG. CASE 5—*Two Apoplectic Seizures, with Hemiplegia; Corrected Diet and Habits; Continued Good Health.*—Mr. W. R., R. R. superintendent, and as such, a man of free habits, inclined to constant excess of diet and drink. In 1858, had a slight apoplectic attack, leaving him partially hemiplegic on left side, gradual recovery of arm, slower of leg. Habits not corrected, and in two years a second and graver attack, with protracted convalescence; long removal from business, and imperfect gait. Being fully alarmed, he wholly changed his habits and associations; became totally abstinent, cautious in diet, limited his hours of business, and employed his leisure hours out of doors, walking, riding, and gardening. His health has steadily improved, no recurrence and is well to-day. The reverse in

CASE 6—Judge S., of inactive habits, having passed many years upon the bench; full physique, being upwards of 65, had had two light apoplectic attacks, leaving a defect in walking on left side, slight facial relaxation, a muffled quality of speech and mental irascibility, indicating further danger. In 1873, being on

a visit to his son in New York, and feeling unusually well, he visited the theatre, and walking home, partook freely of a late collation. In the night he was seized with a third attack with hemiplegia. Returning to consciousness the following morning, after many days of critical uncertainty, he was able to ride and return to his home. His recovery in this case was less than before, and a year later occurred the fourth and fatal apoplectic stroke.

Excessive diet, overloading the stomach, is often the predisposing cause of apoplexy as well as of the immediate attack and its early recurrence. Dr. Combe described the Monks of La Trappe, near Nantes, an Order having as a part of its discipline the eating of but one meal a day. But this one meal was excessive, enough for a week. Following its ingestion, the eater sank into a deep lethargy of three or four hours, with alarming apoplectic features (Pavy, p. 477).

Of neuralgias in various parts of the body, many, as hemicrania gastralgia, and pleurodynia, are often purely symptomatic of dyspepsia, while a great majority are dependent on a rheumatic and gouty vice, which are to be removed only by corrected diet.

How often, in women, does the point of spinal tenderness, correspond to the gastric regions, and depend on perverted digestion. The night terrors of children, though simulating premonitory stages of tubercular meningitis or hydrocephalus, are, as a rule, the sympathetic and reflex result of irregular and imprudent diet. The lesser attacks of infantile paralysis, so often developed in robust, and hitherto healthy children, and frequently at night, often possess no other known cause for the spinal congestion, which is their lesion, than gross errors of diet.

The diagnostic relations of the indigestions to the functional cardiac derangements, as well as to true cardiac disease, are most intimate. This results from the contiguity of the organs, a community of nerve supply in the branches of the pneumogastric and extensive connections with the thoracic and abdominal ganglionic plexuses. A great proportion of all cases of cardiac disturbance, precordial distress, frequent or slow pulse, and especially its in-

termissions and irregularities are purely functional, and dependent on states of the stomach, intestines and liver.

Again, recalling that of organic diseases of the heart, two great causes exist :

1. Changed nutrition, by gouty and rheumatic irritation.
2. Atheroma and fatty retrograde of its vessels, we see that indigestion, mal-assimilation, and mal-nutrition are their antecedents and underlying origin.

The heart is reinforced for its incessant work, not only from the sympathetic plexuses without, but possesses three hundred or more ganglia imbedded within its muscular walls which invariably preserve the synchronism of the two ventricular contractions, and the uniformity of its rhythm. Galvanizing the pneumogastric will accelerate cardiac action, so also, will stimulation of any of its peripheral fibres, as of the stomach by food in healthful digestion. Reversed, a disturbance of cardiac action is the immediate result of gastric disorder. The functional systolic apex murmur, reduplication of the second sound, irregularity and intermission are evidences of incoordination of the several contracting muscular strata of the heart. Syncope from gastric flatulence is not uncommon. The heart, free from any organic lesions, has its innervation so disordered that, in momentary cessation, anemia of the brain and unconsciousness result. That exceptional instances of syncope permit of heart clot and death cannot be doubted.

That the non-professional man misconstrues his indigestion and conceives he has heart disease is natural, since most of the alarming symptoms of true cardiac change are thus spuriously produced.

The pain in the left arm, shoulder and scapular region, induced by the connection of the phrenic with cervical nerves, is a well-known symptom of cardiac disease but more often is dyspeptic. Dyspnoea suggests disease of the heart. Cheyne's diagnostic sign of fatty heart is occasional sighing, suspirous inspiration ; yet these are the every day and temporary products of indigestion. It is when these symptoms of thoracic oppression and vascular disturbance simulate angina pectoris they are most alarming.

CASE 7—*Cardiac Angina due to flatulent distension of Atonic Stomach*.—James F., from North of Ireland, a good physique and general health, by vocation a tea broker. I saw him for the first time in 1873, when I was called in haste to a neighboring drug store to see a man said to be dying; I found him with alarming cardiac oppression and irregular spasmodic and intermitting action of the heart; the pulse at times frequent and again unusually long cessations. He suffered from sense of suffocation, violent palpitation, precordial fullness and distress, and thoracic constriction. His face expressed terror, was pale and bathed with perspiration. He dare not move from his seat, and had his hands braced upon his thighs to aid thoracic action, and his futile efforts to eructate gas. Percussion elicited tympanitic resonance over the left hypochondriac region and extending far below the ribs and above, causing elevation and distension of the left cornu of the diaphragm, with pressure upon the apex of the heart. xxx gtt. tinct. capsicum in whiskey and water was administered with partial relief, enabling him to walk to my office. I then ascertained he had frequent attacks, and had been treated for cardiac disease. No evidence of cardiac disease appeared; the sounds were normal and area of dullness natural. By subsequent adherence to laxative cereal food at breakfast, rare meats at lunch, a light supper, the omission of coffee, tea and water at meals, pepsine and bismuth in diluted Holland gin with meals, and a tonic of calisaya and gentian, he became entirely cured of his simulated cardiac disease.

Where dilatation or fatty heart exist, it is to be remembered that these symptoms occur with even greater frequency and severity. But the feeble or rounded pulse, appreciated by the finger, and which the sphygmographic trace shows wanting in both length of line of ascent and acuteness of apex, the feeble or wave-like chest impulse of the apex beat, feeble and distinct sounds or regurgitant murmur exist in variable degree to distinguish the fatty and dilated states of the heart singly or coexisting.

CASE 8—Mr. J. D. O., aged thirty-eight, salesman, having no appreciable cardiac disease and of healthy appearance and good physique. First seen in 1869, when seized by alarming angina

pectoris—suffused face, precordial pain and thoracic constriction. Was promptly relieved by hypodermic of morphia; had a similar attack years before. No evidence of the narcotic action of coffee, tea or tobacco detected, or of any degree of nervous exhaustion. By advice he paid increased attention to his diet, freedom of the bowels, and in lesser subsequent attacks obtained relief by warm stimulating and acid drinks, and they gradually subsided altogether. But the occurrence of true cardiac angina in aneurism, dilatation and other organic heart states, especially in coronary embolism is established, and unless the attack yields speedily, it should not be regarded as functional; but the milder cases are chiefly neurotic affections, associated with the cardiac plexus—temporary spasm or paræsis. Recently Prof. A. Flint has recorded numerous cases of remarkable infrequency of the pulse, some of which, and others narrated in the ensuing discussion, were shown to be functional, connected with defective assimilation, excessive nitrogenous diet and deficient excretion. The following is in point:

CASE 9—*Slow pulse in healthy young man due to Acholia or to Atonic state of Intestines.*—Mr. T., a young Englishman, age thirty, good physique and fair health, but sedentary, in-door pursuit of bookkeeper. Troubled with sleepiness, muscular heaviness and inactivity, and had noticed the sluggish quality of his pulse, which at two consecutive times, at an interval of a week, I found to be forty. He had an indifferent appetite, coated tongue, and slight constipation. Finding him in all other respects well, I assumed that circulation of azotized matter, nitrogenous waste, excretory substance, which hepatic and intestinal activity should eliminate, caused sedation of the nervous centres. Ordered a powder—resina podophyli one-twelfth grain, and hydrargyri protochloride grains x., which reduced vascular tension, gave relief to the head, and imparted a lighter feeling to the body; diet was regulated and exercise prescribed, and a pill of podophyline, strychnia and quinia after meals. His mind cleared, relief was general and pulse advanced to averages of seventy-two.

The causative relation of indigestion to the hypertrophic heart states is direct. Dr. Quain has properly distinguished the mus-

cular, fibrous and fatty hypertrophies of the heart. By establishing the lactic and lithic acid diathesis and the valvular lesions of endocarditis or adhesions of pericarditis, it develops the compensative muscular hypertrophy. But habitual excess of food loads the blood with an excess of formative elements, and according as nitrogeous elements, or the hydrocarbons predominate in the diet, is developed the musculo fibrous heart, or true cardiac obesity.

To a lesser degree than those of the heart, disease of the lungs may be simulated by perverted digestion.

Labored breathing, thoracic pain, exhausting irritable cough and catarrhal attacks are frequently induced by errors of diet. The now generally received theory of respiration is that it is stimulated to its regular and rhythmical recurrence by a reflection from the medulla of the nutritive demands of all parts of the body for a constant supply of oxygenated blood. Its normal character then depends on the equalized interchange of supply and waste. Whenever excretion is incomplete, in constipation, or the deficient elaboration of bile, there may result discomfort in respiration. Again, excretory matter in the blood circulates with difficulty in the elaborate capillary lung structure, and is also the cause of local irritation and pulmonary hyperemia. In a more direct way by the agencies of the pneumogastric the lungs are found to be deranged by gastric and intestinal causes. In this manner the attack of bronchitis, pleurisy, or pneumonia owes its occurrence to the congestive disorders of indigestion. Tonsillitis is rare in persons of guarded appetite and regular bowels. False croup is the offspring of irregular and bad feeding. The asthmatic recognizes as scarcely secondary to atmospheric changes and irritants, the causative relation, of abuse or neglect of the alimentary canal, to his distressing paroxysms.

There are several gastric disorders which lead to depressions of the general health simulating upon a superficial inquiry pulmonary phthisis. When ulcer of the stomach combines with ejection of fluid blood, general emaciation, debility and secondary cough, careful interrogation and physical exploration are essential to detect the cause and of the seat of the primary disease. In advanced

years when chronic gastritis or degeneration of the gastric follicles produces a progressive starvation, the contracted chest, secondary hyperæmia, catarrh and cough may deceive the patient and physician as to which is cause and which effect. A careful inquiry into many cases of assumed phthisis among the poorer classes frequenting hospitals and dispensaries reveals the fact that in some at least, simple defect in quantity and quality of food has led to bodily waste, contracted chests, feeble expansion, and secondary coughs.

Since the year 1828, when Dr. Bright advanced the essential facts as to albuminuria, there had been a steady development of knowledge as to the, hitherto obscure, degenerated state of the kidneys; and to no other class of diseases, consumption not excepted, has so much professional and nonprofessional attention been given. Renal disorders are apprehended with every slight impairment of health, variation in the visible appearance of the urine, or obscure lumbar pain. Yet, scarcely any other group of symptoms, so often as the renal is dependent on perverted digestion and disordered assimilation, these organs eliminating excretory matter, which they neither form nor modify, and which is the result of disease elsewhere. The variable color, acidity, specific gravity, quantity and kind of sediment, are chiefly determined by the digestive apparatus. Animal diet causes acidity of the urine. Lehman found that five-sixths of all the nitrogenous matter is excreted by the kidneys, vegetable diet lessens acidity, and tends to alkalescence. The nitrogenous diet taxes the kidneys. Lehman found that 476 grs. of animal food ingested, 376 of nitrogenous makes exit by the urine. On the other hand, the hydrocarbons and carbo-hydrates—the fats and vegetable—fibrin throw no work upon the kidneys. The presence of phosphates is rather indicative of nerve waste; the presence of lithates represents nitrogenous food is in excess, the inactive liver and constipation. The present season our profession has lost by death one of its ablest scholars whose name is identified with this subject. Dr. Warburton Begbie recognized in oxalic acid in the urine an evidence of incomplete assimilation, incomplete oxidation of nitrogenous food, and gave us a remedy to supply the defect—nitromuriatic acid.

At least one form of Bright's disease, the cirrhotic or gouty kidney, is the product of a vice of nutrition, while the frequent recurrence of the acid states of the urine, incident to indigestion and excessive diet, create chronic hyperæmia, and favor the other forms. The presence of albumen and the simpler casts may not argue irretrievable changes in the kidneys. Corrected diet and habitual activity of the skin and bowels may remove the primary cause, and avert the renal complication.

There are other diagnostic relations of indigestion worthy of attention, which I am forced to omit. One condition in which the digestive function, as a whole, should be carefully studied, is that of a slow convalescence from systemic disease. Often a delay due solely to continued medication or injudicious feeding of an enfeebled stomach, and in others dependent upon accumulation of the debris of wasting disease in the systems.

CASE 10—*Convalescence Protracted by Atonic Stomach and Medication.*—Mrs. W——, in 1873, slowly and unsatisfactorily convalescing from a protracted malarial fever, was left in my charge by a friend while out of town. Her solution of quinine failed to benefit her further, her stomach gave discomfort, her appetite was nominal, and she could not sleep. Being in doubt as to the best course, all medicine by day was temporarily suspended, a powder of $\frac{1}{2}$ gr. codeia and 10 grs. bismuth taken on retiring. Being detained from seeing her for two days, on my next visit I was prepared to receive the upbraiding of an irritable convalescent, but found the first night's sleep followed by appetite; she was now dressed and sitting up, with no further occasion for medical attendance.

Nature often terminates her severest diseases by critical evacuations, which frequently are most profuse. In imitation of this method, the older writers advise aperients and diuretics following measles and small-pox, and wherever danger exists of accumulation of deleterious matter; secondary diseases, slow recovery and functional inaction are thereby prevented. Excretion is the last step in the nutritive process, but if defective, the earlier steps of digestion are impossible.

CASE 11—Mrs. C—, now at the climacteric period, in June, 1876, became the patient of Dr. L. ; having previously been prejudiced against so-called allopathy, she had for several months entrusted her case to irregulars and charlatans, who had treated her without definite diagnosis, finally abandoning her in an enfeebled condition as beyond help, with asserted fatty heart. She sought the regular physician with fear, and only as a dernier resort. She was helplessly feeble, without appetite, generally œdematous, the urine small in quality, high specific gravity, but no definite evidence of serious structural change in the kidneys. The action of heart and lungs feeble, but no organic disease. Nervous excitement was first allayed and rest secured by Dover powder, grs. v. on retiring. After the second day, bromide of potash was substituted ; attention being drawn to the excretion by the liver and kidneys on the fourth day, alteratives and diuretics were directed. In twenty-four hours the urine, carefully measured, increased from $7\frac{1}{2}$ ounces to 117 ounces, losing its high specific gravity, color and precipitate. The second twenty-four hours, 179 ounces of urine were voided, much of this fluid, of course, representing the subcutaneous fluid as the œdema coincidentally subsided ; the third twenty-four hours the quantity was 96 ounces ; the fourth, 52 ; the fifth, 49. She meanwhile began to sit up, dress, eat, and is making a rapid recovery. Though some degree of cardiac or renal disease may exist, the speedy restoration is illustrative of the dependence of all the functional activities of the body on the prompt removal of accumulated excretory matter.

